RARE-EARTH DOPED PHOSPHATE-GLASS SINGLE-MODE FIBER LASERS

ABSTRACT OF THE INVENTION

A compact low-cost continuous single-mode fiber laser delivers output powers in excess of 50 mW over the C-band (1530 nm- 1565 nm). The phosphate glass fiber supports the high doping concentrations of erbium and ytterbium (Er:Yb) without self-pulsation that are required to provide sufficient gain per centimeter needed to achieve high power in the ultra short cavity lengths necessary to support single-mode lasers. The use of fiber drawing technology provides a lower cost solution than either combined solution doping/MCVD fiber fabrication or waveguide fabrication. The ability to multi-mode clad pump the fiber further reduces cost, which is critical to the successful deployment of fiber lasers in the burgeoning metro markets.